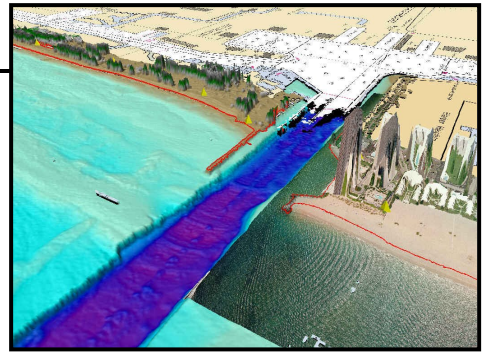
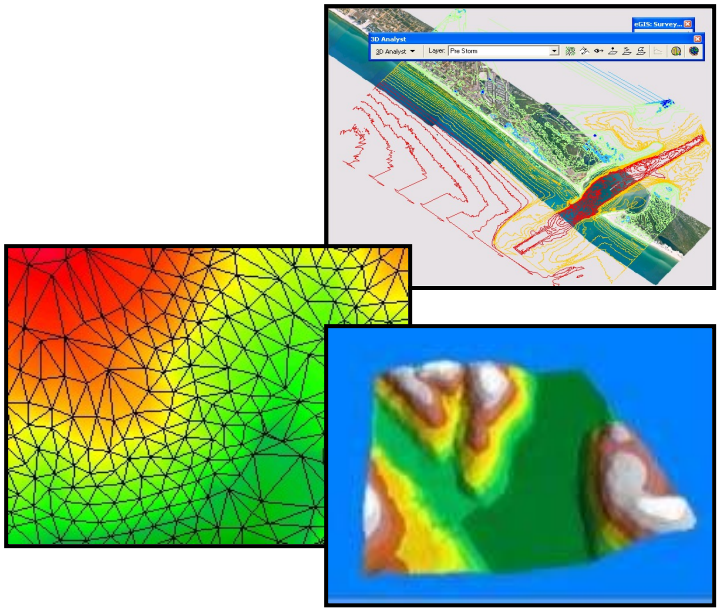


eCoastal in a Nutshell:

An Introduction to the eCoastal Program & Custom Applications



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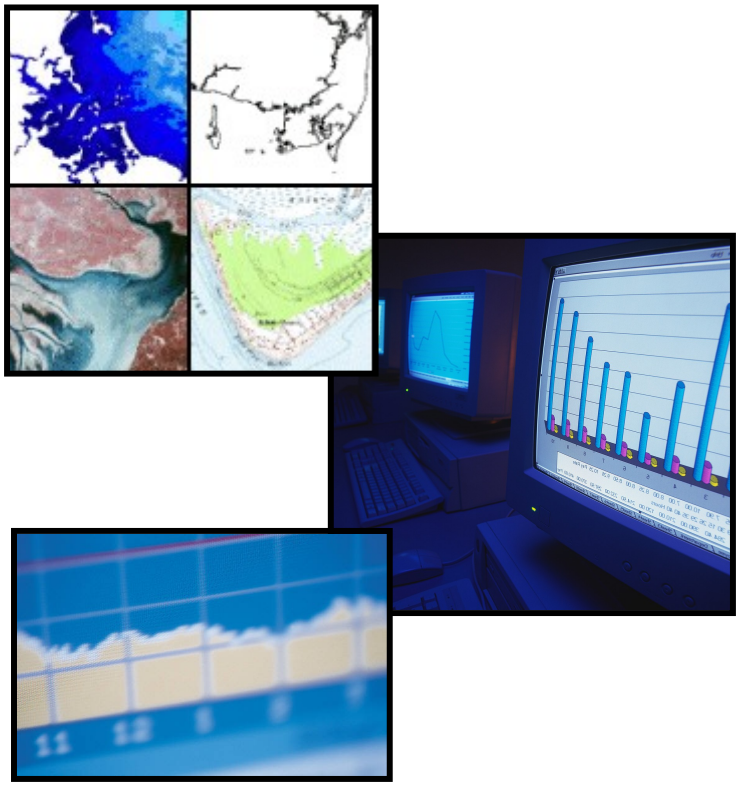
Regional Approach

- In the past, the US Army Corps of Engineers (USACE) has focused on managing sand at coastal projects on a project-by-project basis.
- This approach to sand management may not adequately consider the impact of individual projects on down drift projects.
- A regional approach allows leveraging of:
  1. Resources
  2. Applications
  3. Database Architectures
- eGIS supports regional business center
  1. More efficient use of resources
  2. Propagate effective, more accurate and informed decision-making
  3. Increase access and dissemination of digital information

Introduction: What is eGIS?

Enterprise GIS is defined as *the integration of geospatial technology infrastructure to deliver spatial information products, services and standard datasets to all business elements and processes of the organization.*



The concept of enterprise GIS (eGIS) is taking a complete organizational approach to sharing, using, and managing spatial information.

Introduction: What is eCoastal?

eCoastal is an enterprise GIS developed for coastal engineering business practices. It was developed to concentrate on the specific needs of the coastal engineer.

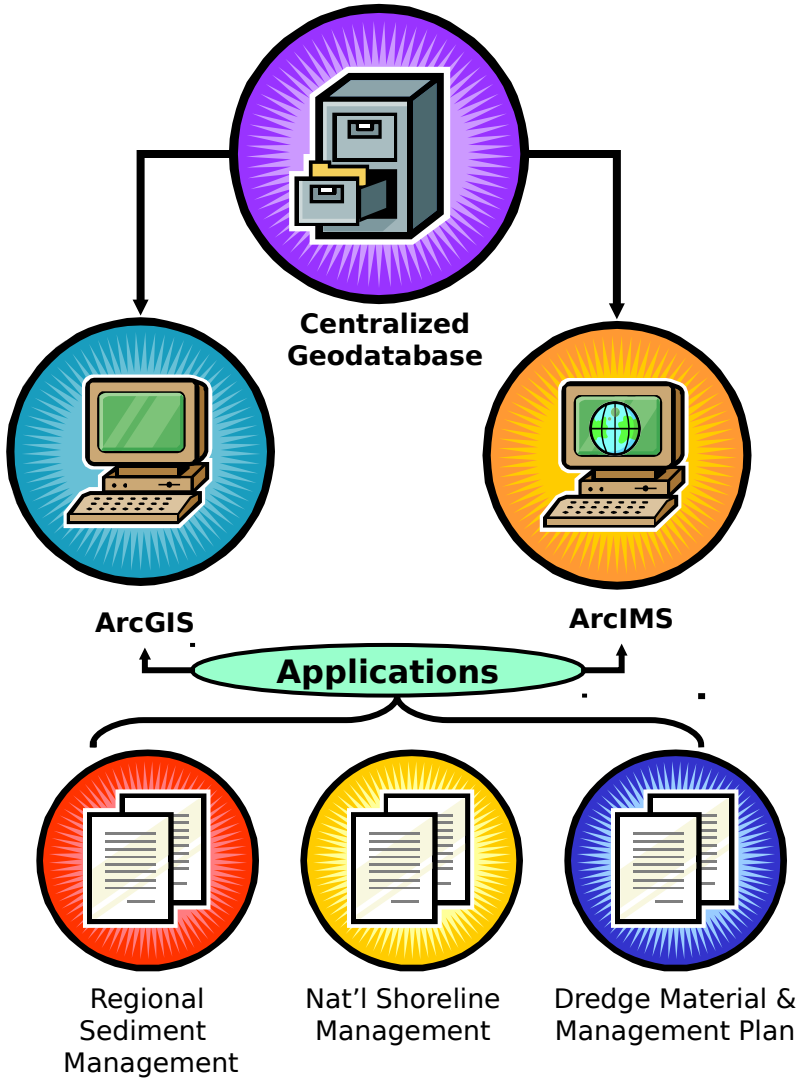
eCoastal is an architecture developed by the U.S. Army Corps of Engineers that addresses spatial data standards (SDS), geodatabase development, and desktop and web applications. It was designed as data management solution to provide baseline information for effective planning and prediction of regional and local coastal processes.

This architecture allows adjacent coastal projects to effectively share and access data contained in the system.

Introduction: Architecture Overview

The centralized geodatabase serves as the data repository for all spatial data accessed by the enterprise GIS applications. The underlying format of the enterprise database (SQL or ORACLE) is at the discretion of the local District Office.

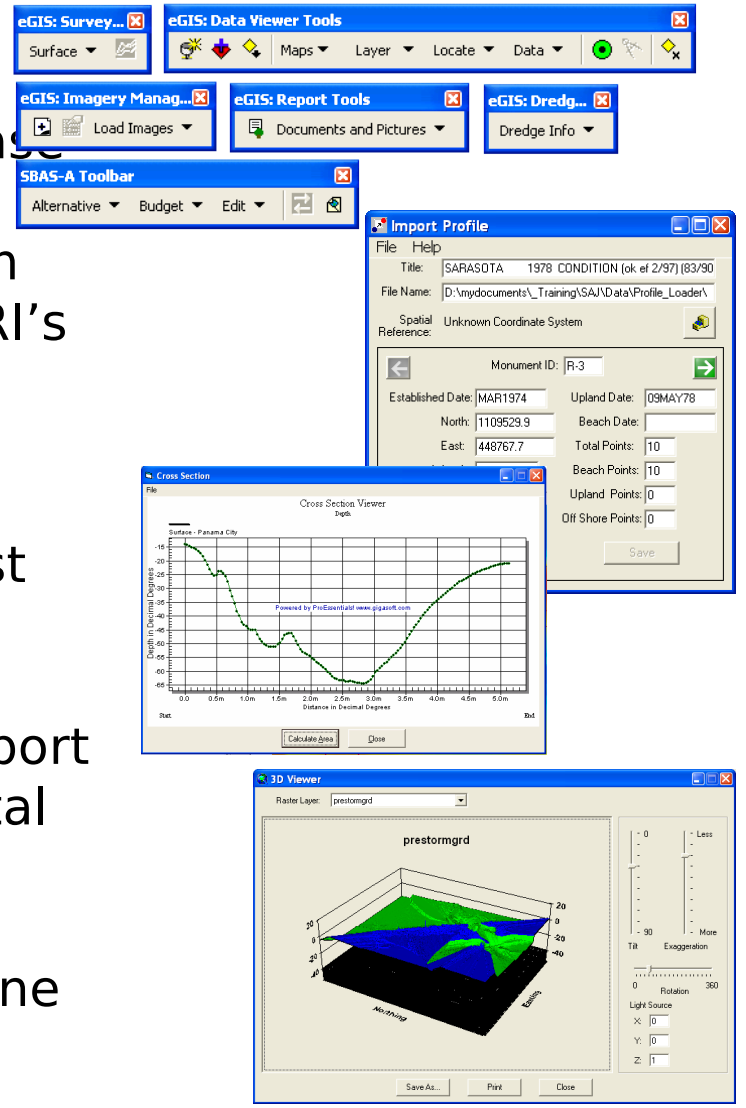
Data collected or created for all coastal projects are imported into the geodatabase. Only one geodatabase exists to serve data to the public, via the Internet accessible interface, and to support the internal applications.



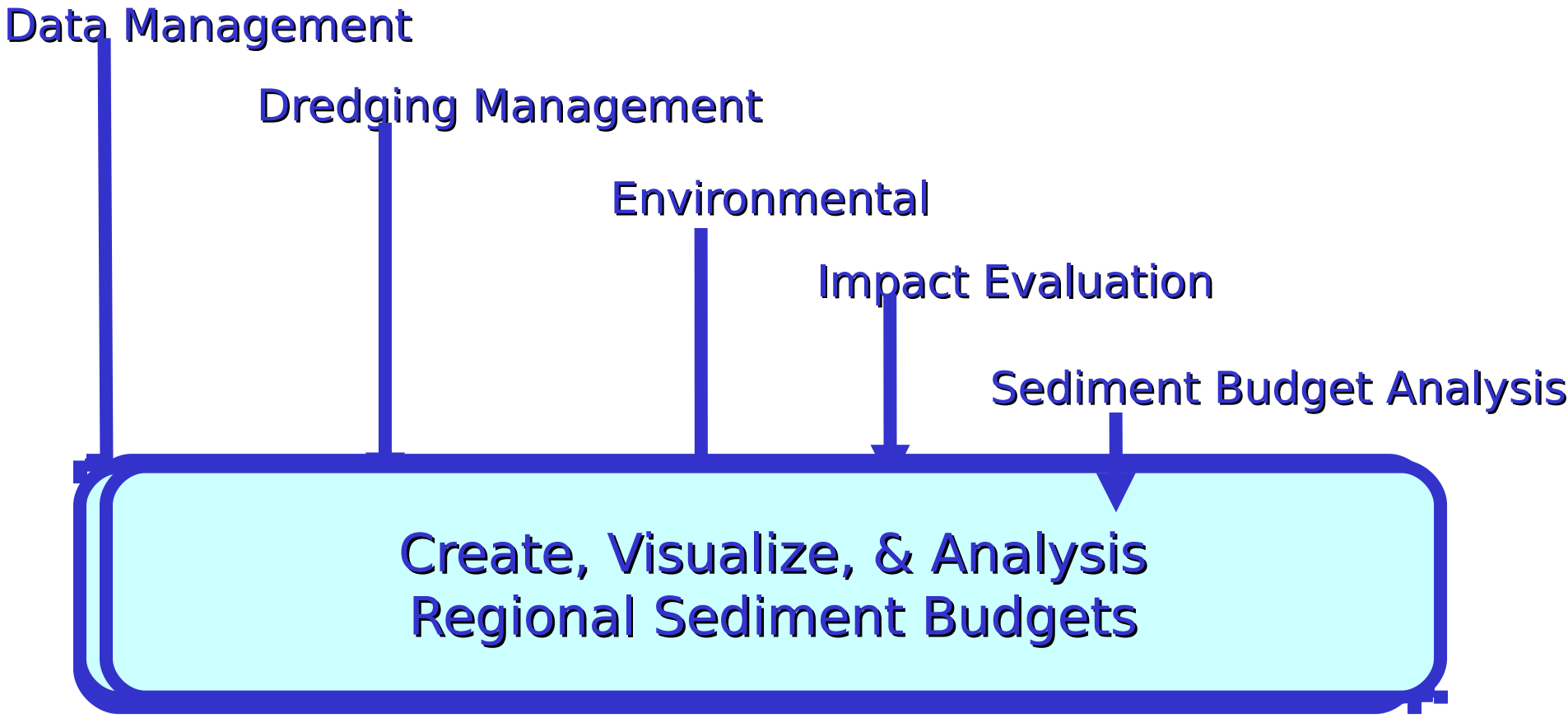
Introduction: Architecture Overview

Natively, users can browse the geodatabase using ESRI's ArcCatalog™ or ArcMap™. However with eCoastal, a series of custom applications have been developed for ESRI's desktop products as well as the internet accessible, ArcIMS™ platform.

These applications were designed to assist the users of the enterprise system with access and analysis of the coastal data. Applications have been developed to support the needs of the existing and future coastal projects, such as the Regional Sediment Management, Dredge Material and Management Plan, or the National Shoreline Management projects.



eCoastal System



Application Demonstration – Data Viewer & Imagery Manager

The eCoastal's eGIS Toolbox was created as a comprehensive set of applications that enable stakeholders in management decisions to explore the broad spatial and temporal impacts of potential management actions.

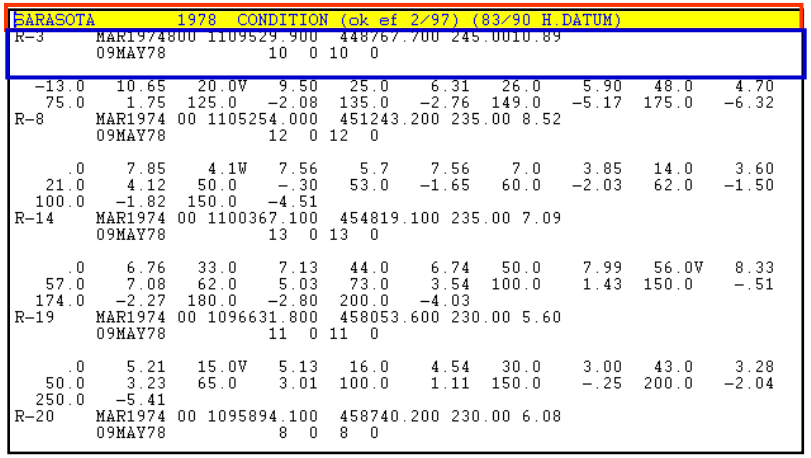
In the U.S. Army Corps of Engineers (USACE), these tools have emerged as necessary components for effective planning and prediction of regional and local coastal processes. A geographic information system with specialized applications was developed to provide baseline information for regions including hydrographic and topographic data, shoreline position, aerial and oblique photography, hyperspectal imagery, dredging records, nautical charts, and other data regarding regional utilities, infrastructure, and land use.

This demonstration will show the utility of the Data Viewer Tools and Imagery Manager toolbars.

Application Demonstration – Beach Profile Importer

Beach profiles can be delivered in a variety of formats. Not all formats are directly compatible with ArcMap. The Beach Profile tool was designed to allow you to import profile data that currently exists in a distance-azimuth format.

The Profile Loader application reads all values listed in the text file, and transposes them into an XYZ format. The application also places values stored in the header how and automatically places them in a metadata file. When data is converted into this format, ArcGIS can plot the file.



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```

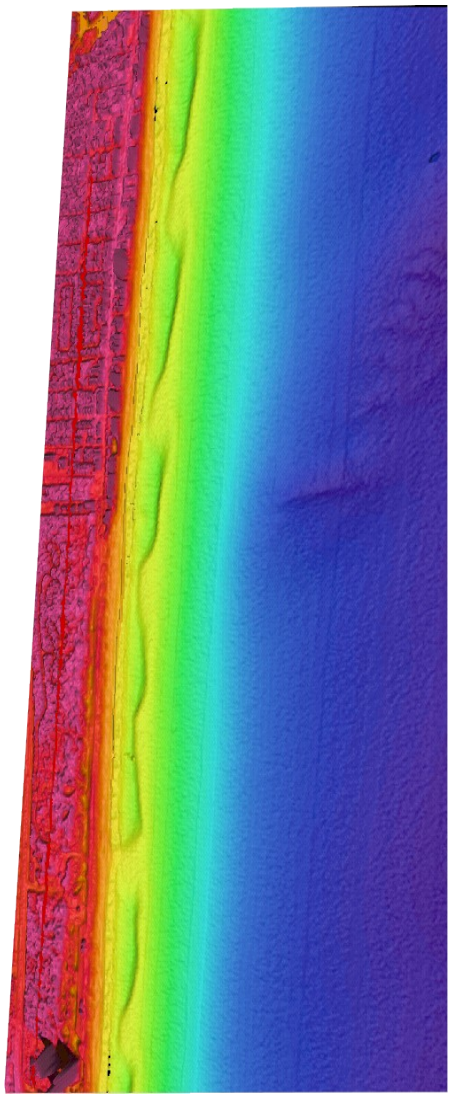
Application Demonstration – Survey Tools

Lidar data is an integral part for data analysis in coastal engineering. The eGIS: Survey Toolbar was specifically designed for coastal engineers to simplify the formatting process of lidar datasets.

You can:

- Generate contiguous TIN or grid surfaces based off of existing point files.
- Calculate the Volume Difference between surveys.
- Cut, extract and view Profile data from surfaces.
- View surface in 2D window.

Before these tools can be utilized, lidar data must be properly formatted.



Application Demonstration – SBAS-A

The **Sediment Budget Analysis System** (SBAS) provides a framework for formulating, documenting, and calculating sediment budgets, including estimation of uncertainty, hence the reliability of the budget. SBAS allows representation of multiple inlets within a sediment budget that can be local or regional. The model formulates a sediment budget by allowing the user to create a series of cells and arrows representing sources and sinks which characterize the conceptual budget. Sediment budget cells, arrows expressing directions of net, east-, and west-directed transport rates, and notation of P and R values comprise what is called the sediment budget topology.